

GPS Timing Receivers Comparison at the SLR in Helwan (Poster)

*Ivan Prochazka, Josef Blazej, Makram Ibrahim**

Czech Technical University in Prague, Brehova 7, 115 19 Prague, Czech Republic,

fax +420 224 922 822, prochazk@cesnet.cz

** National Research Institute of Astronomy and Geophysics, Helwan, Egypt*

We are presenting the comparison test of several types of the Global Positioning System (GPS) timing receivers. The Smart GPS Clock type HP58503B has been used as a reference. The influence of the satellite selection strategy in the case of the Trimble Navigation 5000A has been identified. The performance of the low-cost GPS receivers - OEM modules by Garmin - has been tested in detail. All the timing receivers have demonstrated a capability to provide the epoch reference within 100 nanoseconds compared to the reference. The dependence of the timing spread and accuracy of the Trimble 5000A on a satellite selection strategy has been identified. Surprisingly, the low-cost OEM modules by Garmin provided the same accuracy for the cases, when a sensor was installed with an non-obscured view of the entire sky. These OEM sensors may provide a simple and cheap back up alternative to the GPS timing receivers once the clear non-obscured view on the sky can be guaranteed. This research has been supported by the grant MSM6840770015 and by the grant of the Grant Agency of Czech republic No. Ga205/05/0110.